L Number	Hits	Search Text	DB	Time stamp
1	2245404	squid and magnetic field	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/04/04 11:41
2	60164	squid and magnetic field and assay	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/04/04 11:42
3	6522	squid same magnetic field same assay	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/04/04 11:44
4	3	(magnetic adj field) same squid same assay	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/04/04 11:47
5	1398	(magnetic adj field) same squid	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/04/04 11:49
6	1	(magnetic adj field) same squid same analytes	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/04/04 11:49
7	7	(magnetic adj field) same squid and analytes	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/04/04 11:52
8	9	(magnetic adj field) same squid and assay	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/04/04 11:53
9	27	(magnetic adj field) same squid and (magnetic adj particle)	USPAT; US-PGPUB; EPO; JPO; DERWENT	2002/04/04 11:56

DOCUMENT-IDENTIFIER: US 5981297 A
TITLE: Biosensor using magnetically-detected label

---------- KWIC ---------

ABPL:
This method and apparatus for detecting target molecules in a liquid phase. The apparatus monitors whether the target molecule has selectively bound to recognition agents on the surface of a magnetic field sensor by monitoring the output of the sensor. The recognition agents which selectively bind target molecules are covalently bound to microfabricated magnetic field sensors. These sensors are then exposed to a sample suspected of containing the target molecules, whereupon the recognition agents bind to and immobilize any target molecules present. Depending on the embodiment, recognition agents that selectively bind the target molecule, or recognition agents that selectively bind the sensor-bound recognition agents, are covalently bound to magnetizable particles. These particles are then added to the sensors and, again depending on the embodiment, attach either to any immobilized target molecules or to sensor-bound recognition agents. Unattached particles are removed, and the magnetic particles are then magnetized. A change in the output of the magnetic field sensors indicates the presence of magnetic particles bound to the sensors, and thereby indicates the presence and concentration of target molecule in the sample.

BSPR:
The present invention relates to a method and apparatus for detecting target molecules with binding assays, such as DNA, RNA, receptor, or antibody binding assays, taking advantage of labels that produce and respond to magnetic fields.

BSPR:
Binding assays such as immunoassays, DNA hybridization assays, and receptor-based assays are widely used in the medical community as diagnostic tests for a wide range of target molecules.

BSPR:
As used herein, the term "analyte" indicates the molecule, species, or organism whose presence, absence, or concentration one is interested in determining, while the term "target molecule" or "target species" indicates the molecular species whose presence, absence, or concentration the assay in question

DOCUMENT-IDENTIFIER: US 6004257 A
TITLE: Method for ameliorating the aging process and the effects thereof utilizing electromagnetic energy

---------- KWIC ---------

DWKU:
6004257

DEPR:
A solenoid comprised of a hundred turns of copper wire (gage 37), 533.4 ohms/1,000 ft. at 25.degree. C. is prepared. The body of the cylindrical core is a non-magnetic substance, having a diameter of 8 ft., and is 12 ft. long. A water proof, non-magnetic bathtub is placed into the solenoid and ordinary ocean water is placed into the bathtub. The solenoid is placed in an environment which has minimal magnetic noise, i.e., far from power lines, air conditioning vents, magnetic objects having a high relative permeability such as iron. A super conducting quantum interference device (SQUID) is utilized to measure the intensity of the magnetic fields, both outside the solenoidal system and inside, to ensure lack of interference of magnetic noise as well as to determine the magnetic flux density of the created signal in water, with a preferable homogeneous isotropic signals inside the solenoidal system. The long axis of the solenoid is placed in a north-south orientation to minimize interference with the geomagnetic field. The human to be treated is placed in an east-west orientation during treatment, sunrise and sunset, while in a prone position. During midnight and midday the patient may stand. Mu metal, a metal which blocks magnetic noise, as well known in the art, may be used on the walls of the treatment room to block out noise but the geomagnetic field will still come up from the floor.

DEPR:
It is believed that this interaction is an opportunity to reorient altered submolecular magnetic domains by placing the patient in a large water tank and exposing him to a `virtually` static magnetic field (frequency of 10.sup.-6 Hz) with an intensity equal to physiological biomagnetic fields of 10.sup.-8 G. If the amplitude of the field is adequately modulated there would be quantum genetic resonance phenomena, the transformation of oncogenes into normal genes could follow. This may lead to therapeutic applications in terminal cancer patients and in patients suffering from other diseases, such as AIDS, genetic

DOCUMENT-IDENTIFIER: US 6123902 A
TITLE: Device for highly sensitive magnetic detection of analytes

---------- KWIC ---------

BSPR:
JP 63090765-A2 describes a SQUID immuno assay method based on magnetically marked antibodies or antigens. Unbound portions must, however, be removed from the sample (separation) following the antibody-antigen reaction. An appropriate apparatus therefor must consequently contain a device for separating the bound from the unbound labels. The magnetization of the sample is measured subsequent to separation in the presence of a magnetic field, i.e. measurement of the magnetization takes place in the field.

BSPR:
An improvement in the latter embodiment provides that the first device can produce predetermined time varying amplitudes and predetermined time varying polarities of the magnetic field produced by the magnetizing device. This facilitates remanence measurements without spatial motion of the sample. The binding remanence measurement principle can therefore also be utilized for the case of in vivo measurements. In addition, multianalyte assays are possible. Constant or stationary interfering fields can also be easily compensated. The signal-to-noise ratio can be improved to a further extent through comparative measurements and averaging procedures. Measurement of the magnetization curve is also possible with the device and, finally, the SQUID system can be permanently operated in the FLL-mode more closely described below, whereby the applied magnetic field itself can be measured.

436/526 422/68.1
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DOCUMENT-IDENTIFIER: US 6027946 A
TITLE: Process and compounds for the magnetorelaxometric detection of analytes and use thereof

---------- KWIC ---------

BSPR:
By the use of sensitive measuring processes, in the case of the procedure according to the invention, ultrahighly sensitive binding-specific immunoassays or other binding assays which can be performed both in the liquid phase and in the solid phase can be set up using ferromagnetic or ferrimagnetic colloidal particles. As an especially sensitive measuring process, after the sample is magnetized in a magnetizing field and after the field is turned off, the relaxation of the magnetization can be determined with the aid of highly sensitive magnetic field detectors (such as, e.g., superconducting quantum interference devices (SQUIDs), induction coils, flux gate magnetometers, giant magnetoresistance sensors, or magnetoresistive converters), or the complex susceptibility of the sample can be determined as a function of frequency of the magnetizing field.

CLIPPEDIMAGE= JP363090765A
PAT-NO: JP363090765A
DOCUMENT-IDENTIFIER: JP 63090765 A
TITLE: SQUID IMMUNOASSAY

PUBN-DATE: April 21, 1988

INVENTOR-INFORMATION:
NAME
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ASSIGNEE-INFORMATION:
NAME COUNTRY
NIPPON TELEGR & TELEPH CORP <NTT> N/A

APPL-NO: JP61235774
APPL-DATE: October 3, 1986

INT-CL_(IPC): G01N033/553; G01N033/536
US-CL-CURRENT: 435/962

ABSTRACT:
PURPOSE: To obtain a novel immunoassay having excellent detection sensitivity by using ultrafine magnetic particles as a label for an antigen-antibody reaction and separating and removing the unreacted ultrafine magnetic particles in a magnetic field, then measuring the susceptibility of the antigen or antibody with a superconducting quantum interference device (SQUID) having extremely high sensitivity.

CONSTITUTION: Ultrafine magnetic particles used as a the label are attached to a specific or unknown antigen or antibody to form a magnetic material labeled body. An antibody or antigen as specimen is then brought into the antigen-antibody reaction with the known antigen or antibody made into the solid phase; or the antibody or antigen as the specimen is directly made into the solid phase to induce the antigen-antibody reaction with the magnetic material labeled body ad thereafter, the unreacted magnetic material labeled

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DERWENT-ACC-NO: 1988-150640
DERWENT-WEEK: 198822

TITLE: Squid immunoassay - comprises labelling sample with ultrafine magnetic particles, subjecting to antibody-antigen reaction and squid assaying

PATENT-ASSIGNEE: NIPPON TELEGRAPH & TELEPHONE CORP[NITE]

PRIORITY-DATA: 1986JP-0235774 (October 3, 1986)

PATENT-FAMILY:

PUB-NO	PUB-DATE	LANGUAGE	PAGES	MAIN-IPC
JP 63090765 A	April 21, 1988	N/A	010	N/A

Not designated for publication

APPLICATION-DATA:

PUB-NO	APPL-DESCRIPTOR	APPL-NO	APPL-DATE
JP63090765A	N/A	1986JP-0235774	October 3, 1986

INT-CL_(IPC): G01N033/54

ABSTRACTED-PUB-NO: JP63090765A

BASIC-ABSTRACT: In squid immunoassay one antigen or antibody is labelled with magnetic ultrafine particles to form a magnetic labelled body, and the labelled body and a sample are subjected to antigen-antibody reaction. After the antigen-antibody reaction. Magnetic labelled bodies that have not reacted are removed from the sample The magnetisation of the sample is measured with a superconductive fluxoid quantum interferometer (squid).

USE/ADVANTAGE - This is a method of immunoassay having very high sensitivity, which permits specific antibodies or antigens to be detected from a small sample. Used as an early test for new types of viral diseases such as aids, adult T-cell leukeamia, etc. or an an early test for various types of cancer, immunoassay making use of antigen-antibody reactions that have been developed. As the immunoassay for microquantities, radioimmunoassay (RIA), enzyme immunoassay, fluoroimmunoassay, etc have been used. Of these methods, the RIA only permits determination of very slight amount of sample in the order of picogram. However, it uses isotopes for labelling and so requires special equipment. Further, in terms of half-life, waste disposal, etc. its use is limited. Therefore an immunoassay method having detection sensitivity

alternative medicine therapies

magnetic field therapy:

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INTERACTIVE

Create Your Own Personal Wellness Profile

Overview:

This alternative treatment benefits from the important interrelationship between electromagnetic energy and the human body.

Description:

Magnetic field therapy diagnoses and treats both physical and emotional pain; it relieves symptoms and retards the cycle of new disease. Magnets and electromagnetic therapy devices are now being used to eliminate pain, facilitate healing of broken bones, and counter the effects of stress.

The world is surrounded by magnetic fields: some generated by the earth's magnetism, others generated by solar storms and changes in weather. Magnetic fields are also created by electrical devices (e.g. motors, televisions, office equipment, computers, microwave ovens, electrical wiring in homes, power lines). Even the human body produces a subtle magnetic fields generated by chemical reaction within cells and ionic currents of the nervous system. An electromagnetic field (EMF) is composed of *both* an electric and a magnetic field. The electric field is due to the presence of charged particles (such as electrons) and the magnetic field is due to the movement of the charged particles (such as an electron current). Recently, scientist discover that external magnetic fields affect the body's functioning in both positive and negative ways. The observation of this led to the establishment of magnetic field therapy.

All magnets have two poles, one positive and one negative. In 1974 Albert Roy Davis, Ph.D., noted that positive and negative magnetic polarities have different effects upon the biological systems of both animals and humans. Davis then concluded that negative magnetic fields have a beneficial effect on living organisms, whereas positive magnetic fields have a stressful effect. A positive magnetic pole, with

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- herbal medicine
- homeopathy
- magnetic-field therapy

have a stressful effect. A positive magnetic pole, with prolonged exposure, interferes with metabolic functioning, produces acidity, reduces cellular oxygen supply, and encourages replication of latent microorganisms. Positive magnetic fields can increase pain due to their interference with normal metabolic functions.

Robert Becker, M.D., (Orthopedic surgeon) found that weak electric currents promote the healing of broken bones. He brought national attention to the fact that electromagnetic interference from power lines and home appliances can pose serious hazard to human health.

Kyoichi Nakagawa, M.D., Director of the Isuzu hospital in Tokyo, Japan, believes that the time people spend in buildings and cars reduces their exposure to natural geomagnetic fields of the earth, and may interfere with their health. He calls the condition that they subsequently must suffer from, magnetic field deficiency syndrome, which, he says, can cause headaches, dizziness, muscle stiffness, chest pain, insomnia, constipation, and general fatigue.

Static magnetic fields are produced by natural or artificial magnets. Pulsating magnets are generated entirely by electrical devices. According to William H. Philpott, M.D., of Choctwaw, Oklahoma, magnetic fields can stimulate metabolism and increase the amount of oxygen available to the cells of the body. Dr. Philpott pioneered the use of magnetic therapy for psychiatric disorders. The biological value of oxygen is increased by the influence of a negative electromagnetic field, and the field causes the negatively charge deoxyribonucleicacid (DNA) to "pull" the oxygen out of the bloodstream and into the cell. The negative electromagnetic field keeps a cellular buffer system (pH or acid-base balance) intact so that cells remain alkaline; pathogenic microorganisms cannot survive in a well-oxygenated, alkaline environment. Also, magnetotherapy can increase enzyme action because it fosters a favorable environment within cells (mainly a proper pH).

A negative magnetic field applied to the top of the head has a calming, sleep-inducing effect on brain and body functions, due to the stimulation of the production of the hormone melatonin. Melatonin is antistressful, antiaging, antiinfectious, anticancerous, and has control over respiration and the production of free radicals (highly destructive molecules that are missing one electron, and readily react with other molecules). Free radicals can lead to decreased efficiency of protein synthesis.

Method:

- massage therapy
- meditation therapy
- mind/body medicine
- music therapy
- naturopathic medicine
- orthomolecular medicine
- therapeutic touch
- yoga

There are no harmful side effects to magnetic field therapy if used properly. A magnetometer is used as a standard method of determining the poles of a magnet. With a compass, the arrowhead of the needle marked "N" or "North" points to the magnets negative pole. The strength of a magnet is measured in units of gauss (magnetic flux intensity) or tesla (1 tesla=10,000 gauss). The actual strength of a magnet at the skin surface is less than the manufacturer's gauss rating because the magnet's strength decreases with increasing distance from the subject. Two different conventions or "standards" for naming the north and south poles of a magnet have developed. One is called the "conventional" or "industrial" magnetic pole nomenclature, while the other is called the "magnetobiological," "biomagnetic," or "medical" convention. Unfortunately, they are *opposite* to each other: What the industrial convention calls north, the medical convention calls south and vice versa.

Large machines capable of generating high magnetic fields are used for treating fractures and pseudoarthritis, a joint affliction caused by nerve breakdown. Magnetic blankets and beds reduce stress and promote sleep. Ceramic, plastiform, and neodymium (rare earth chemical element) magnets are placed individually or in clusters above various portions of the head. In Japan, small *tai-ki* magnets are designed to stimulate acupuncture points, although no clinical studies have been done on these magnets as of yet. Small disc magnets (made or ceramic neodymium or iron oxide) are placed around the head to alleviate symptoms of panic, seizures, delusions, and hallucinations.

There are generally two different methods of magnetic therapy application, those who expose the body to only the north (negative) pole and those who use low gauss strength simultaneous exposure to both the negative and positive poles. Magnetotherapy practitioners who exclusively use the north (negative) pole suggest an exposure intensity of 2,000 to 4,000 gauss, an intensity not recommended for a dual or bi-polarity applications. The placement is generally simple and straight forward, with the magnet being placed directly on the area being treated, like applying a band-aide. In contrast, magnetotherapy practitioners who promtote the use of spatially alternating magnetic poles generally employ magnets that are made with some sort of spatial pattern of alternating magnetic polarity such as concentric circles or a checkerboard pattern.

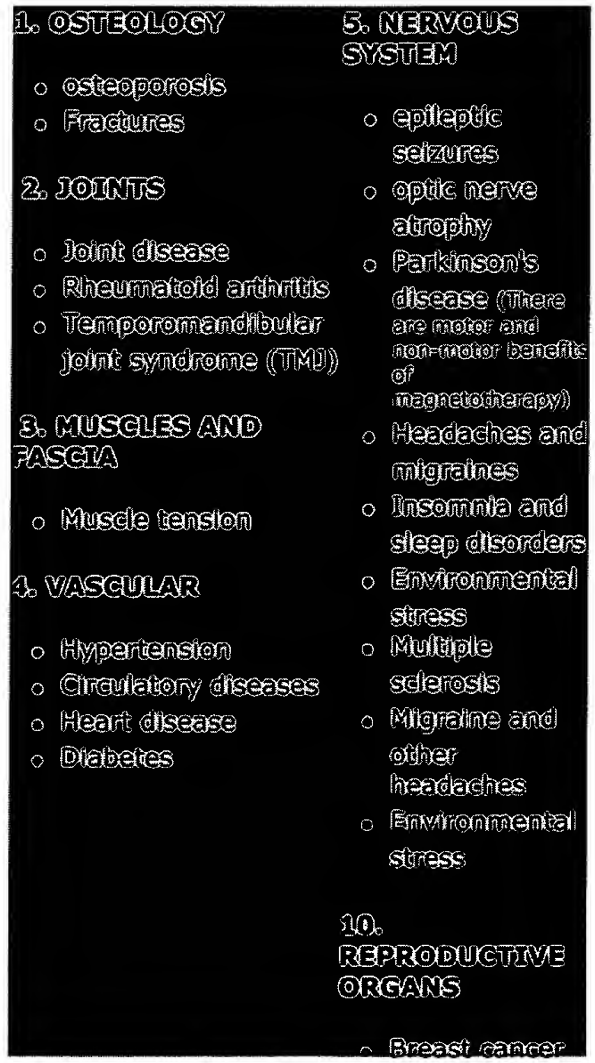
The duration of treatment is very important. The longer a magnet is applied to the injured or painful area, the more quickly it heals and the greater the symptom relief. Close to twenty four hours a day application is sometimes suggested, if possible. The

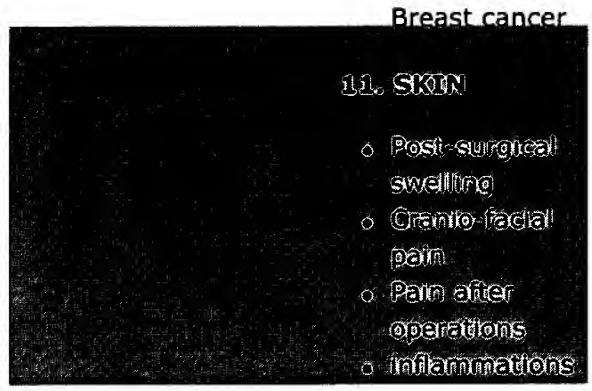
duration of treatment is dependent upon the persistence of symptoms.

Common cures:

Dr. Albert Roy Davis,Ph.D., found that magnets could be used to arrest and kill cancer cells in animals, and could be used to treat arthritis, glaucoma, infertility, and diseases related to aging. Magnets eliminate toothaches, eliminate periodontal disease, and eradicate fungal infections, like candidiasis. Magnets dissolve kidney stones and calcium deposits in inflamed tissues. Furthermore, magnetic therapy reduces swelling and edema.

A negative magnetic field can stop such symptoms as hallucinations, delusions, seizures, or panic without disrupting a patient's mental alertness. The negative magnetic field normalizes disturbed metabolic functions that cause painful conditions such as cellular acidosis (excessive acidity of cells), lack of oxygen to cells, and infection.





Application:

Magnetic Resonance Imaging (MRI) is slowly replacing x-ray diagnosis because it is safer and more accurate. In addition, magnetoencephalography is now replacing electroencephalography (EEG) as a preferred technique for recording the brain's electrical activity.

Magnetic devices are very popular in Germany because the use of certain devices is covered there by medical insurance. NASA eventually incorporated artificial magnetic fields inside manned spacecraft because of the realization that the earth's natural geomagnetic fields are probably beneficial and perhaps necessary to life itself.

Modern medicine's perspective:

With MRI and other magnetic field diagnostic techniques, magnets and electrical devices are beginning to gain mainstream medical acceptance as human diagnostic and treatment tools because medical equipment manufacturers and distributers are primarily driven by the profit motive to promote their products. Because magnets do not introduce any foreign substances to the body, this will make them safer over the long-term than aspirin or other over-the-counter medications.

The repeatedly observed benefits of magnetic field therapy, while intriguing, are too often not convincing to many Western medicine authorities and practitioners. In order to rule out placebo effects and convince mainstream doctors that magnetic field therapy actually does work, many scientific studies need to be done and published in reputable, peer reviewed journals. This means that placebo studies with both real and fake (placebo) magnets must be done. As of now, there has been little funding for magnetic field therapy, an important area of science and medicine.

Case Studies:

#1: This personal experience, cited by Dr. Ludwig, features a 46-year old man who suffered from severe heart flutter, diarrhea, nausea. No treatment helped him until a magnetic applicator with less than 1 gauss of energy was placed upon his solar plexus for three minutes. His symptoms immediately ceased; no relapse occurred two years later to boot!

#2: A 27-year old man who had undergone coronary bypass surgery continued to suffer from heart pain. His walk was reduced to a shuffle, his speech became slurred, and he struggled with chronic depression. According to Dr. Philpott, a plastiform magnet was placed over the man's heart. Within ten minutes his pain almost miraculously disappeared! He also had magnets applied to the crown of his head while he slept and within months, his depression was gone, his speech was clear, and his walking returned to normal.

#3: A woman in her 70's had pain and weakness in her left leg for 33 years from a blood clot in her groin area. She could not climb stairs without stopping due to the excessive pain she experienced, according to Dr. Philpott. After 12 months of sleeping on a negative magneto-electric pad, the woman found that she could walk long flights of stairs without pain or weakness in her leg.

#4: A woman who had a benign tumor removed from her spine could not walk without dragging her feet. Dr. Philpott placed a positive magnetic pole over the area where the tumor had been removed. The result: the woman began to walk perfectly. With positive and negative field magnets and lots of practice, neuronal function returned. The positive magnetic field (with brief exposure due to the potential dangers) stimulated nonfunctioning neurons and produced endorphins (the brain's pain killers, naturally occurring opiates). The negative magnetic field prevented neurons from becoming overly excited.

Links & Resources: